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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LU, TOM Y	

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/798,457	SOENKSEN, DIRK G.	
	Examiner	Art Unit	
	Tom Y Lu	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,3-6,8,11,12 and 16-23 is/are rejected.

7)☒ Claim(s) 2,7,9,10 and 13-15 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 7 and 9 are objected to because of the following informalities: Claims 7 and 9 should be dependent upon Claim 2. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-6, 8, 11-12, 16-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al (U.S. Patent No. 6,091,846) in view of Suzuki et al (U.S. Patent No. 5,412,214).

a. Referring to Claim 1, Lin discloses a stage (xy stage 22, column 5, line 64) configured to support a microscope sample (wafer 20, column 5, line 63) and move the microscope sample at a substantially constant velocity (xy stage 22 is a movable stage that moves at a substantially constant velocity so that the image of the wafer can be acquired at a fine quality, column 15, lines 14-15); an illumination system (energy source 25, column 5, line 66) configured to illuminate a portion of the microscope sample; an objective lens positioned for viewing the illuminated portion of the microscope sample (microscope 24, column 5, line 29, inherently contains an objective lens for viewing the illuminated portion of the microscope sample); a line scan camera optically coupled with the objective lens (line scan camera, column 6, line 4), the line scan camera configured to create a digital image strip of a portion of the microscope sample (see figure 12a for image strips of a portion of wafer), the digital image strip captured while the microscope sample is moving at substantially constant

velocity (the image strips are captured while the microscope sample is moving); an image composer configured to align adjacent digital image strips into a contiguous digital image of a portion of the microscope sample (column 15, lines 30-34, also see figure 12a, the image strips are aligned); and a data storage area configured to store the contiguous digital image (image memory, column 15, line 37 is used to store the contiguous digital image). However, Lin does not explicitly teach the stage is a motorized stage. Suzuki at column 4, line 32, teaches a moving plane for moving a wafer is moved using motors. At the time the invention was made, a person of ordinary skill in the art would have been motivated to use a motorized stage because both Lin and Suzuki teach using a stage to convey a wafer in x and y directions, and Suzuki at column 4, lines 40-41, teaches using motors in combination with a stage control system to move the stage plane would optimize the speed corresponding to the difference between the target position and the current position measured by the laser interferometer.

b. Referring to Claim 3, the combination of Lin and Suzuki discloses a first motor configured to move the microscope sample in a first direction in the sample plane; and a second motor configured to move the microscope sample in a second direction in the sample plane, wherein the second direction is orthogonal to the first direction (Lin teaches the stage is a xy stage, which moves in x and y direction, and x direction is orthogonal to y direction).

c. Referring to Claim 4, the combination of Lin and Suzuki discloses wherein the first motor is a servo motor (Suzuki: column 4, line 42).

d. Referring to Claim 5, the combination of Lin and Suzuki discloses wherein the illuminated portion of the microscope sample comprises a linear field of view (Lin: see figure 12a for each strip as in linear view).

e. Referring to Claim 6, the combination of Lin and Suzuki discloses wherein the illumination system is optimized to uniformly illuminate the linear filed of view (Suzuki: column 3, line 47).

f. Referring to Claim 8, the combination of Lin and Suzuki discloses wherein the line scan camera is configured to capture red, green and blue color signals through discrete linear array sensor, wherein each linear array sensor is configured to capture 8 bits of data (Lin teaches the image captured in color, column 19, line 41, and the standard in the art is to use 8 bits to represent each color pixel).

g. Referring to Claim 11, the combination of Lin and Suzuki discloses wherein the contiguous digital image is a diffraction-limited contiguous digital image (the contiguous digital image in Lin is a diffraction-limited contiguous digital image).

h. With regard to claim 12, see explanation in Claim 1.

i. With regard to Claim 16, see explanation in Claim 4.

j. Referring to Claim 17, the combination of Lin and Suzuki discloses wherein the digital image of the first strip has a first length and a first width and the digital image of the second strop has a second length and a second width, and wherein the first length and the second length are not equal (see figure 12a in Lin).

k. Referring to claim 18, the combination of Lin and Suzuki discloses wherein the first width and the second width are equal (see figure 12a in Lin).

l. Referring to Claim 19, the combination of Lin and Suzuki discloses wherein the first width and the second width are not equal (Note in Lin, the length of an image strip can be considered as width, and see figure 10u for different lengths for image strips).

m. Referring to Claim 20, the combination of Lin and Suzuki discloses wherein the first strip comprises a first perimeter edge of the sample and an opposing perimeter edge of the sample, wherein the first edge and the opposing edge are separated by at least 2 micrometers (Lin does not explicitly state the width of the image strips, or the exact shape of the wafer design. However, Lin implicitly teaches it is capable to have one image strip to contain a first perimeter edge of the sample and an opposing perimeter edge of the sample, see figure 12a in Lin for wafer edges).

n. With regard to Claim 21, see explanation in Claim 20.

o. With regard to Claim 22, see explanation in Claim 3.

p. With regard to Claim 23, see explanation in Claim 3.

Allowable Subject Matter

3. Claims 2, 7, 9, 10, 13, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Takeuchi U.S. Patent No. 6,519,357 B2, see columns 5 and 6.

b. Suita et al U.S. Patent No. 5,400,145, see figure 1.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Y Lu whose telephone number is (703) 306-4057. The examiner can normally be reached on 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Y. Lu